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<b>(54) Title:</b> FRAUD RESISTANT REMOTE PURCHASING SYSTEM <b>(57) Abstract</b> <p>A remote purchasing system linking a calling party (prospective purchaser) and a called party (prospective seller) for purchasing and selling goods or services over a telephone network, using a calling party identification number (CPIDN) of the calling party and a three-way connection (or a series of two-way connections) to provide security against fraud. An authorized calling party is assigned a caller account associated with calling party's CPIDN. A switch or other facility of the system reads the CPIDN of an incoming call, and a register within the system tests the CPIDN against an approved list. If the CPIDN matches, then the system completes the call, a transaction processor within the system participating. The transaction processor controls the caller account in accordance with predetermined conditions and, responsive to an authorization from the calling party, will post the transaction to the caller account of the calling party.</p>		

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## FRAUD RESISTANT REMOTE PURCHASING SYSTEM

FIELD OF THE INVENTION

5 This invention relates to the creation of a new secure Remote Purchasing System (as hereinafter defined). The invention has particular utility for rendering a Remote Purchasing System wholly (or at least relatively) impervious to fraud.

BACKGROUND OF THE INVENTION

10 Recently there has been an increased demand for remote access purchasing of goods or services. Whether in the context of a television "shop at home" channel; a commercial on-line electronic computer service such as  
15 COMPUSERVE, PRODIGY, or AMERICA ON-LINE; a "noncommercial" on-line service such as the Internet; the more traditional catalog businesses as they convert from mail-order to a fax or phone-order way of doing business; or even the completely traditional fax or phone order from a retail store, there is  
20 a desire to provide remote access purchases.

Such remote access purchases can be accomplished with credit accounts or with prepaid debit accounts (both of which will be referred to, simply, as accounts).

25 A potential customer in a conventional remote purchase situation will typically be called upon to provide identifying information. At some point in the transaction, the potential customer is typically asked to provide account

information and billing authorization by way of a credit card number or other account number, and often, also a "Personal Identification Number" (or PIN), which may be a series of numbers or letters intended uniquely to identify a customer. Some such transactions may now, or could in the future, employ a more or less sophisticated encryption method to provide further security, but the encryption techniques often are imperfect and usually add a level of difficulty that make those techniques non-feasible or difficult for mass consumer markets.

There are several problems associated with remotely accessing and charging an account for the purchase of goods or services, and foremost among these is the problem of security. It is well known that remote access purchasing is vulnerable to fraud. A dedicated criminal, and such computer experts as are criminal hackers, can use a stolen credit card or other account information or, as part of the transaction itself, can intercept and steal such credit card or other account information. These people are often not deterred by encryption schemes. This creates an obstacle to more widespread use of remote purchasing, and affords an opportunity to the inventor who can develop an inexpensive, and user friendly method of securing remote purchase transactions against such fraud.

Despite the insecurity of certain telephone account numbers, access codes, PIN numbers, and credit card or other account information, the inventors of the method described

herein have recognized that there is yet another piece of information which is unique to each originating telephone number, which is completely (or at least relatively) resistant to fraud, and which, based on the novel application described herein, can be used to secure remote purchase transactions against fraud. This information is the unique calling party identification code which is presently passed from the originating telephone to the network switch.

The originating telephone's unique identifier is known under several names, and has been referred to as an "Automatic Number Identification" (or ANI), as a "Calling Party Directory Number" (or CPDN); and as an "Individual Calling Line Identification" (or ICLID). For purposes of this description, the concept will be considered the same, despite the differences in labels, and the ANI, CPDN and ICLID will be considered to be interchangeable terms. For ease of discussion, and in the remainder of this disclosure, except when discussing the work of others who have used different nomenclature, the inventors will refer to a "Calling Party Identification Number" (or CPIDN) and this should be understood to signify the concept of the originating telephone line's unique physical identifier.

The key existing circumstances, which are central to the present invention, are that (a) every originating telephone line does have a unique physical identifier in its CPIDN, (b) a properly configured switch or computer can

recognize this CPIDN, and (c) no one has ever been able to fool the switch or computer as to the identity of the CPIDN. The present invention then seeks to utilize these existing circumstances in a novel manner, utilizing a Three-Way Verified Connection (as hereinafter defined) within a new telecommunications configuration, referred to herein as the Remote Purchasing System.

Although, to the applicant's knowledge, no one has been able to counterfeit the CPIDN, no one has ever used a CPIDN to secure a Remote Purchasing System. Moreover, although the prior art is aware of the ability to identify a calling party by its CPIDN (e.g., caller ID), and even of the ability to use the CPIDN to limit access to a central computer to authorized users, no one has previously taken advantage of the potential of the CPIDN to create a Remote Purchasing System secure from fraud. The uniqueness and significance of this application appears well demonstrated by the facts that: (a) commercial development of the Internet, and of on-line sources such as COMPUSERVE, AMERICA ON-LINE and PRODIGY, are presently severely hampered by the perceived inability to effect remote purchasing secure from fraud, and (b) companies such as MICROSOFT, MCI, SPRINT, VISA, MASTERCARD, and others are now said to be collectively spending tens (if not hundreds) of millions of dollars searching for a method to effect remote purchasing secure from fraud. It appears clear that the prior art has not yet realized that there presently exists, in the CPIDN, a tool to effect remote purchasing secure from fraud, when the

CPIDN is, in a novel manner, linked and incorporated within a novel system for doing so.

5 Various unrelated uses have been made of the CPIDN, but only to limit access to central computers to authorized users or to identify a calling party (the "Caller ID Function"). None of these prior uses have been designed to secure remote purchasing transactions.

10 The existing prior art may be grouped into two main categories: either caller ID-type usage of the CPIDN; or use of the CPIDN to limit access to central computers to authorized users. With respect to the caller ID-type of usage, it appears that the CPIDN is being used simply to  
15 identify the caller without having to ask for a name. That is, the CPIDN is being used in order to eliminate the need for voice communication, but without any attempt to use it to provide security. With respect to the use of CPIDN to limit access to central computers, the concern seems to be  
20 one of access in accordance with preapproved user authorizations. Examples of the prior art in both categories include these:

25 U.S. Patent No. 5,369,699 of Page et al. for an Adaptable Personnel Supervisory System with Automatic Fee Collection describes a system and method for automatically tracking and reporting the status of a group of enrollees and collects a fee for those services. Each enrollee reports in to a host computer of the system through a fee-

based telephone network that automatically charges a prescribed toll fee to the originating telephone number. The host uses the ICLID information included in the incoming call and determines whether the caller is an enrollee by virtue of utilizing the Caller ID Function of such ICLID information.

U.S. Patent Nos. 5,023,904 and 4,797,913 of Kaplan et al. for a Direct Telephone Ordering Service disclose a way to order goods or services without a voice interchange. The system is positioned within a local access and transport area (LATA) switching network which has "Feature Group D services" using a predetermined dialing plan and a Feature Group D interexchange carrier number. In accordance with the dialing plan of the Feature Group D service, the first five digits of the originating call are used to direct the call to the system within the LATA to a point of termination wherein the system appears as an interexchange carrier. The system is then free to use the remaining ten digits of the originating call as variables for identifying information such as, name of vendor, product, grade, and so on. Thus, the system can function without any voice or other supplemental messaging. This carries forward also to the identity of the calling customer. The Caller ID Function of the ANI for the calling customer is used for customer identification, once again eliminating the need for voice or other supplementary messaging.



U.S. Patent No. 5,301,246 of Archibald et al. for a Data Communications Equipment Security Device Using Calling Party Directory Number discloses a method of limiting access to a central computer facility to authorized users by use of the CPDN. A telephone line from a local public switched network is configured to provide CPDN information. The line is terminated in a data communications equipment (DCE) site at the computer facility to be accessed. Upon receiving a telephone call from a calling party, the DCE can:

- (a) answer the call if the calling party's CPDN is on the approved "caller pays" list, (b) refuse to answer, but then make a return call to the originating telephone if the calling party's CPDN is on the approved "we pay" list, or
- (c) neither answer nor make any return call if the calling party's CPDN is not on any of the lists.

U.S. Patent No. 5,003,595 of Collins et al. for Secure Dial Access to Computer Systems describes a way to make it difficult for unauthorized callers to access a target central computer such as a database for taking orders from field agents. The system uses the ANI for connecting a caller to a called target computer, and includes other facilities, including facilities for rejecting certain incoming calls and trapping others.

In contrast, the system of this invention is based upon the use of the unique CPIDN (associated with a telephone line which is registered with the system) for security purposes. It is the ability of a telephone switch

to read this number, without the possibility of a fraudulent intervention, that permits creation of a Remote Purchasing System, which involves the establishment of a three-way verified connection among the calling party, the called party, and credit/debit management systems, and which is wholly (or at least relatively) secure from fraud.

Accordingly, the only demand which the Remote Purchasing System of this invention places upon a user is that the System requires the remote purchase of products or services to be initiated from the line registered by the prospective purchaser (this line will be referred to herein as a "Home Base"). In effect, the CPIDN becomes the calling party's credit (or debit) card number and PIN number but, unlike conventional credit (or debit) card numbers and PIN numbers, this identifying number is impossible to intercept, steal or misuse.

The advantages of the Remote Purchasing System of this invention can be realized not only where the goal is to permit the calling party to purchase and charge a product or service on a credit account, but also to debit an existing prepaid account balance for the same purpose. The Remote Purchasing System of this invention has application whether the goal is to permit secure remote purchase transactions in a conventional context such as purchasing a product or service by fax or telephone or, alternatively, when the goal is to permit secure commercial transactions of this type in an inherently non-secure environment such as a computer-accessed electronic data base like the Internet. Finally,

the Remote Purchasing System of this invention has application whether instituted from a telephone, a fax, a computer or any other Telephonic Device.

5           The more conventional methods of purchasing over the telephone are well-known. When a shopper wants to purchase a product or service by telephone, the shopper will provide the Seller with the shopper's credit card or account number. At the very least, this involves a major risk of loss,  
10 either because of a previously stolen credit card or access information or because the credit card number or access information can be stolen in connection with the transaction. Additionally, there are two other problems or inconveniences that could be eliminated through the practice  
15 of the Remote Purchasing System of this invention.

          The risk of loss itself is very substantial and the elimination (or reduction) thereof by itself has significant value. It has been estimated that the conventional  
20 telephone order charging process involves hundreds of millions of dollars per year of fraud.

          The other two problems or inconveniences are these:  
(1) The conventional telephone purchasing process requires  
25 the shopper manually or orally to provide, and the Seller manually to record, the necessary credit information, including credit card number, expiration date, and the like, none of which is needed in the Remote Purchasing System of this invention; and (2) The conventional telephone

purchasing process typically requires that the purchased item be sent to the billing address of the shopper, in order to minimize the possibility of fraud, a requirement that would no longer be necessary under the Remote Purchasing System of this invention.

The Remote Purchasing System of this invention provides a secure, fraud resistant method of telephone ordering, while also dispensing with the need for the purchaser manually or orally to provide and for the Seller manually to record account information over the phone, and eliminating the concern that the product be shipped to the billing address. This is accomplished transparently.

Although advantageous in the typical telephone or fax purchasing context, the Remote Purchasing System of this invention is perhaps even more advantageous for purchasing goods or services in an environment which is inherently insecure, such as a computer-accessed online service like the Internet. In this context it not only accomplishes the goals described above, including eliminating the possibility of fraud, but it also eliminates the need for the purchaser to transmit any credit (or debit) card number or information which might then be vulnerable to interception and theft.

#### SUMMARY OF THE INVENTION

In this summary of the invention, in the more detailed description which follows, and elsewhere in this

disclosure, the following terms will have the meanings set forth below:

5 "Call Information" means relevant information about a call made over a telephone network, including the CPIDN of the calling party, the number which is called (the called number), and the duration of the call.

10 "Caller Account" means an account established by customer with the Remote Purchasing System of this invention and associated with the CPIDN of a particular Home Base of the customer. A Caller Account may be a debit account or a credit account. A Caller Account contains all of the credit data (name and address of account holder, account credit  
15 limits, current account balance, etc.) and/or debit data (name and address of account holder, prepaid credit available, etc.) applicable to the account holder, and cooperates with the Credit Management Processor or Debit Management Processor to manage the transaction in accordance  
20 with the terms specifically applicable to the appropriate Caller Account.

"CPIDN" means Calling Party Identification Number; an originating telephone line's unique physical identifier.

25 "Debit Management Processor" and "Credit Management Processor" are processors which manage debit or credit transactions in accordance with the terms of the appropriate Caller Account. The processors might be within a single

piece of equipment, or might be separate pieces of equipment. The processors might be at the location of the Remote Purchasing System or separate (at or with the Seller or at or with a general, third party, credit provider).

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"Home Base" means any home or office in which the telephone line is a separate line having its own CPIDN and which is registered with the system. (By contrast, in an office with a PBX, the CPIDN would be the number of the PBX and not the number of any particular Telephonic Device within the complex.)

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"Register" means a device containing a list or lists of all CPIDNs registered with the Remote Purchasing System and associated with Caller Accounts (debit and credit) established with the Remote Purchasing System. The Register has the ability to match (or to cooperate with the Switch in matching) the CPIDN of an incoming call with the CPIDNs listed in the Register and thereafter to connect (or to cooperate with the Switch in connecting) the incoming line with the appropriate debit or credit Caller Account.

25

"Remote Purchasing System" means the system of this invention utilizing a CPIDN and a Three-Way Verified Connection, among the calling party, the called party and the Credit Management Processor or Debit Management Processor, to create a remote purchasing situation which is wholly (or at least relatively) impervious to fraud.

"Seller" means a seller of goods or a provider of services.

5 "Switch" means a telephone switch, switching system, and/or a computer or like facility performing the function of a switch, and in any event capable of reading a CPIDN from an originating phone line, in each case, together with appropriate associated equipment; "Network Switch" means a Switch which is part of the telephone network; and "Purchase  
10 System Switch" means a Switch which is part of the Remote Purchasing System of this invention.

"Telephonic Device" means a telephone, a fax, a computer or any other device that can access a telephone  
15 line.

"Three-Way Verified Connection" means a telephonic connection in accordance with the system of this invention among (i) a calling party, (ii) a called party (Seller), and  
20 (iii) the Debit Management Processor or Credit Management Processor in which: (a) the telephony aspects of the connection, including the recording of the CPIDN and other Call Information from the calling party, and the completion of the connections, are managed by the Switch; (b) the  
25 credit/debit aspects of the connection, including the posting of a sale transaction between calling party and called party, are managed by the Debit Management Processor or Credit Management Processor in cooperation with the calling party's Caller Account; (c) the calling party's

Caller Account can be accessed, activated and charged and/or debited only after matching the CPIDN of the calling party, as verified by the Switch, with an authorized CPIDN for such Caller Account within the System; and (d) the calling party's Caller Account will be charged and/or debited by the Credit or Debit Management Processor only in accordance with the data contained in such Caller Account. An "Actual" Three-Way Verified Connection is one in which all three links are active simultaneously. A "Virtual" Three-Way Verified Connection is one in which two or more two way links are maintained, as, for example, a two way link between the calling party and the Debit Management Processor or Credit Management Processor; a two way link between the calling party and the Seller; and a two way link between the Debit Management Processor or Credit Management Processor and the Seller.

"Transaction Management Unit" means a Register and a Debit Management Processor and/or a Credit Management Processor, which can be separate pieces of equipment or integrated into a single piece of equipment.

Every telephone line already has a unique CPIDN, which we generally think of as that line's telephone number. The existing Network Switch is able automatically to read and work with this number and, in the context of a conventional call (a) a called number is dialed on the calling telephone, (b) the Network Switch identifies the CPIDN and notes the called number, (c) the Network Switch



connects the calling telephone with the called number,  
(d) the Network Switch records the CPIDN and other Call  
Information, and (e) the Network Switch transmits the Call  
Information to the appropriate billing system of the local  
5 or another telephone network.

The system of this invention makes use of the CPIDN  
already present in connection with a conventional call  
as part of a secure Remote Purchasing System. Although  
10 criminal hackers (and others with motives of committing  
fraud) have been able to steal telephone and other credit  
card and credit enabling numbers, and have been able even to  
clone the enabling chips of cellular telephones, to date it  
is believed that no one has been able to fool a Switch with  
15 respect to a CPIDN. Thus, when a Switch receives a call  
from a particular line, the Switch knows with absolute  
certainty what line the call is from and the CPIDN of the  
calling line. This provides the basis for a secure system  
for providing or accessing credit, which will be described  
20 in overview below (various other refinements and options  
will be described in connection with the more detailed  
description which follows this summary).

The basic equipment and facilities in the  
25 configuration of the Remote Purchasing System of this  
invention include: a Switch capable of reading a CPIDN from  
an originating phone line; a Register of approved CPIDNs; a  
Credit Management Processor and/or a Debit Management  
Processor (it should be understood that some or all of these

are pieces of equipment which could be combined); and a set of Caller Accounts (credit, debit, or both) each associated on a one-to-one basis with an approved CPIDN. Optionally, but typically, the system also includes a set of Seller  
5 accounts.

In operation, a number of calling parties will register Caller Accounts with the Remote Purchasing System. Each Caller Account will be associated with a Home Base for  
10 that calling party. Each Home Base will have a telephone line in communication with a telephone network, and each of those telephone lines will have a unique CPIDN. The Caller Account will be accessible only by the line with the CPIDN associated with it.

The Purchase System Switch will be in communication with the telephone network, and also in communication with the Transaction Management Unit of the Remote Purchasing System. Depending upon the embodiment, the Purchase System  
20 Switch will take the incoming call directly, or will take the call from a Network Switch. In either case, it will handle the incoming calls for the Remote Purchasing System, passing an incoming call and the CPIDN associated therewith, to the Register for the Remote Purchasing System.

The Register (itself, or in conjunction with the Switch) will test the CPIDN of the incoming call against the stored list(s) of CPIDNs of authorized Caller Accounts. If the incoming call's CPIDN matches to an authorized Caller  
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Account (either a credit or a debit account), the Register will pass the incoming call and associated Call Information to the appropriate Credit or Debit Management Processor.

5           The Credit or Debit Management Processor will then open a communication link back to the Purchase System Switch (or it can rely on the link which is already open through the Register). In either case, at this point the Switch will have a two way connection, including the calling party and the Credit or Debit Management Processor. The Switch  
10           will then obtain the number of the called party from the calling party and will route the call to the called number of the Seller. At this point, the Remote Purchasing System will have established a Three-Way Verified Connection  
15           between the Credit or Debit Management Processor, the calling party, and a Seller at the called number.

          By virtue of the Three-Way Verified Connection, the calling party and the Seller will be in communication, not  
20           only with one another, but also with the Credit or Debit Management Processor. Accordingly, if the calling party and the Seller are ready to make a purchase and sale, the calling party will be able, through his or her Telephonic Device, (a) to signal the Credit or Debit Management  
25           Processor that the calling party and the Seller are ready to complete a transaction and (b) to provide the Credit or Debit Management Processor with the transaction information.

If the prospective purchaser decides to purchase, all that would be required is for the prospective purchaser (a) to press the number or symbol on the calling telephone to notify the Credit or Debit Management Processor that an amount to be charged or debited will next be entered, (b) to enter the amount to be charged or debited and (c) to press a number or symbol on the calling telephone to re-enter the amount if incorrect or to notify the Credit or Debit Management Processor that the transaction is complete and correct and should be entered.

Thus, for example, after the calling party presses the number or symbol to indicate that he or she wishes to purchase, a voice prompt could tell the calling party how to enter the proper amount. A \$42.50 purchase may be recorded as #42\*50# (or even by voice). After the amount has been recorded, the system could repeat the amount entered and give the purchaser an opportunity to approve the transaction by entering a signal such as "OK", or to re-record the amount until the purchaser is satisfied.

If there is sufficient credit remaining or, in the case of a debit account, sufficient prepaid credit remaining in the appropriate Caller Account, the Credit or Debit Management Processor would then charge or debit the transaction against the Caller Account associated with the CPIDN of the Home Base of the calling party.

Optionally, if the Seller has an account, the Credit or Debit Management Processor could also automatically credit the transaction to an account associated with the Seller.

5

It can be understood, therefore, that the Remote Purchasing System of this invention centers on the use of the unique CPIDN associated with the telephone line of a calling Telephonic Device in conjunction with a Three-Way Verified Connection. The Three-Way Verified Connection links the Seller, the calling party, and the Credit or Debit Management Processor in a secure system. Before the connection can be made, the calling party's call must have originated from that person's Home Base (and the CPIDN of the Home Base must have been registered with the Remote Purchasing System). No other access can establish a connection. Further, the calling party's Caller Account can be charged or debited only by an instruction from the line debited only by an instruction from the line originating from that person's Home Base. Based on these two factors, the risk of fraud has been eliminated or greatly reduced.

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The foregoing overview summarizes the basic component parts and operation of the system of this invention. In addition to certain variations that will be discussed in the detailed description below, the system of this invention has been designed for further flexibility.

In particular, the system may: (1) be operated in conjunction with the local telephone network or not, (2) be initiated through any Telephonic Device, (3) be established to access a credit account, a debit account, or both, (4) be operated through a Purchase System Switch, (5) be accessed through (a) an "800" number, (b) a 15 digit carrier interface number, (c) the general number of a particular third party provider of credit or of a particular Seller or (d) the special Remote Purchasing System number of a particular third party provider of credit or of a particular Seller, (6) be operated through conventional lines, T-1's, or other lines, including a data link for certain lines or connections, (7) be operated with internal or remote Credit and Debit Management Processors, (8) be operated with or without "call back" facilities, (9) be operated with or without the use of ancillary PIN numbers, (10) be operated as a "stand alone" system, as a system in conjunction with one or more providers of credit, as an integral part of the credit (or debit) system of a particular third party provider of credit, or as a front end or an integral part of the billing system of a particular Seller, (11) be operated so as to provide independent oral or written confirmation to the Seller of the entry of the transaction and also to automatically (and, where appropriate, instantly) credit the Seller in certain cases, (12) be operated to provide voice prompts and perhaps accept voice instructions and (13) be operated with Actual or Virtual Three-Way Verified Connections.

In all cases, a transaction within the system involves a prospective purchaser telephonically communicating with a prospective Seller, with the Remote Purchasing System of this invention having intervened to establish a Three-Way Verified Connection with a Credit/Debit Management Processor after verifying the CPIDN of the incoming call.

The Remote Purchasing System of this invention can, thus, be understood to be an integrated system which (a) would permit the prospective purchaser of products or services to order such products or services by any Telephonic Device from his or her Home Base without the risk of fraud normally associated with such transactions, (b) would permit a provider of credit, such as the operator of the Remote Purchasing System itself or a third party such as VISA, MASTERCARD or AMERICAN EXPRESS, to offer a new system for offering to extend true credit (or access to prepaid credit) for telephonic purchases, without the risks of fraud normally associated with such transactions, and (c) would permit the prospective seller of goods or services, through a provider of credit, or on its own, to sell by Telephonic Device, also without the risks of fraud normally associated with such transactions.

These and other advantages will become more apparent in the detailed description which follows.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic drawing of a first embodiment of a system in accordance with this invention.

5           FIG. 2 is a schematic drawing showing certain aspects of the embodiment of FIG. 1.

10           FIG. 3 is a schematic drawing of a second embodiment of a system in accordance with the invention, reflecting a configuration in which the general telephone number of the Seller is called directly by the calling party. In this embodiment the Seller can then utilize either its own Remote Purchasing System or the Remote Purchasing System of a third party provider of credit.

15           FIG. 4 is a schematic drawing of a third embodiment of a system in accordance with the invention, reflecting a configuration in which the general telephone number of a third party provider of credit is called directly by the  
20           calling party.

DETAILED DESCRIPTION OF THE INVENTION

25           In the description which follows, the Remote Purchasing System of this invention will first be described in overview. Then the basic operations of the system will be explained, together with the associated system logic and basic variations in configurations. Finally, a number of features which add flexibility to the system will be described.



With reference to FIG. 1, it may be understood that the Remote Purchasing System of this invention includes:

(a) a Purchase System Switch 20 capable of reading a CPIDN passed to it from one or more Network Switches 30, 32 (two such Network Switches are shown in FIG. 1 for purposes of illustration only and the Purchase System Switch could actually be accessed by any number of Network Switches); (b) a Register 40 of approved CPIDNs; and (c) a Credit Management Processor 50 and/or a Debit Management Processor 52 (it should be understood that the Register and/or the two Processors are pieces of equipment which could be combined).

A first embodiment of the Remote Purchasing System of this invention is set forth, schematically, in FIG. 1. As shown in FIG. 1, a number of calling parties (here, six such calling parties are shown for purposes of illustration only and the Remote Purchasing System could actually be accessed by an unlimited number of calling parties), each having a corresponding Home Base 60, 62, 64, 66, 68, 70 are in communication with Network Switches 30 or 32 by lines (A). The Network Switches 30 and 32 are in communication with Purchase System Switch 20 by lines (B). The Purchase System Switch 20 is in communication with Register 40 by line (C). Register 40 is in communication with Credit Management Processor 50 and/or a Debit Management Processor 52 by lines (D). The Credit Management Processor 50 and/or the Debit Management Processor 52 is/are in communication with the Purchase System Switch 20 by

lines (E). The Purchase System Switch 20 is in communication with a number of Sellers 72, 74, 76, 78 (here, four such Sellers are shown for purposes of illustration only and the Remote Purchasing System could actually access an unlimited number of Sellers) by lines (F).

A set of Caller Accounts (credit, debit, or both) not separately shown in FIG. 1 is associated, on a one to one basis, with the set of CPIDNs of the calling parties. As a result, there is a Caller Account for each calling party; each calling party's Home Base (60, 62, 64, 66, 68, 70 as shown here) has a CPIDN entered into the Register 40; and each calling party's Caller Account is matched, in a one-to-one relation, to the CPIDN of that calling party's Home Base. Optionally, but typically, the system also includes a set of Seller accounts associated with separate Sellers (72, 74, 76 and 78 as shown here).

The system of this invention could work directly with a local or a long distance carrier. As shown in FIG. 1, the Network Switch 30 and Purchase System Switch 20 are separate facilities; alternatively, it would be possible to adapt a Network Switch so that it would provide the functionality of the Purchase System Switch, thereby eliminating the need for a separate Purchase System Switch 20. While it may be possible to perform the functions of the Purchase System Switch 20 at the Network Switch 30, rather than in a separate switch, so that only a single Switch would be needed and so that the system could

work directly with a local or long distance carrier, the discussion herein is based upon an embodiment in which a separate Purchase System Switch 20 will be used. It should be remembered however, that it is the functions of the Switch which are important and that the system of this invention only requires that there be a Switch or similar facility to perform these functions.

The system of this invention works whether the Purchase System Switch 20 is owned and operated by the Remote Purchasing System, by a third party provider of credit or by a Seller. Thus, in the first embodiment as described above it was assumed that the Purchase System Switch 20 was owned and operated by the Remote Purchasing System and was accessed by dialing the telephone number of the System. This first embodiment would work exactly the same, however, if the Purchasing System Switch 20 was owned and operated by a third party provider of credit, was an integral part of the provider's credit system and was accessed by dialing a special number for the Remote Purchasing System of the provider. Similarly, this first embodiment would work substantially the same if the Purchasing System Switch 20 was owned and operated by a Seller, was part of the Seller's billing system and was accessed by dialing a special number for the Remote Purchasing System of the Seller. The only differences in this last case would be that there would be no need for the Switch 20 to request the Seller's number or then to connect with the Seller, and the connection with the Seller would

probably involve an internal line. In these two variations, it is significant that the Remote Purchasing System becomes completely transparent and the prospective purchaser (the calling party) views himself or herself as calling and dealing directly with a particular third party provider of credit or a particular Seller.

In FIG. 1, lines (A) and (B) are shown as the "800" number of the Remote Purchasing System. Alternatively, line (A) could be a carrier interface number, the first five digits of which would provide access directly to the Remote Purchasing System (without the need for the intervention of a Network Switch or the need for Line (B)).

Lines (F) with Sellers could be T-1 lines or other more efficient or cheaper forms of connection.

The Register 40 and/or the Credit and Debit Management Processors 50 and 52 could be internal (at the site of the Remote Purchasing System) or they could be off-site. A set of off-site facilities might be used, for example, if the system of this invention were located at and/or connected to the facility of a particular Seller, or of a particular third party credit provider. Under such circumstances all or part of the Transaction Management Unit (that is, the Register 40 and the Credit Card Debit Management Processors 50 and 52) could be at the premises of (and could even be part of the facilities of) the Seller or third party credit provider. If the Register 40 and/or the

Credit and Debit Management Processors 50 and 52 were off-site from the Remote Purchasing System of this invention, connections (C) and/or (D) and (E) could be T-1 lines or other more efficient or cheaper forms of connection.

Although the foregoing describes one way of establishing a system in accordance with this invention, it should be clear that several variations could be made and still be within the scope of the invention.

One possible variation would involve the Credit and Debit Management Processors 50 and 52 staying in communication with the Purchase System Switch 20 through lines (C) and (D), which would then provide two way communication, rather than establishing communication through line (E), which would then become unnecessary.

In an enhancement or preferred embodiment of this variation, the Purchase System Switch 20 could have the call from the calling party come in on line (B) to a first port, and the call to the called party go out on line (F) through a second port. Although the line (C) from the Purchase System Switch 20 to Register 40, and lines (E) from the Credit Management Processor 50 and Debit Management Processor 52 to the Purchase System Switch 20, as shown in FIG. 1, contemplate a third port to link the Purchase System Switch 20 and the Credit/Debit Management Processors 50 and 52, a preferred embodiment would eliminate the third port.

In a preferred embodiment, the link would be a common data link (multiplex) between the Purchase System Switch 20 on the one hand and the Register 40 and Credit Management Processor 50 and Debit Management Processor 52 on the other hand. Unlike the system shown in FIG. 1, in this preferred embodiment there would be no connection (E), and connections (C) and (D) would be by multiplex data link and would be two-way rather than one-way.

The Three-Way Verified Connection of the embodiment of FIG. 1 may be better understood with reference now to FIG. 2. In FIG. 2, certain aspects of the system are highlighted. With reference to FIG. 2, a single Three-Way Verified Connection is shown. A calling party at Home Base 60 is linked by line (A) to Network Switch 30. Network Switch 30 is linked to Purchase System Switch 20 by line (B). The Purchase System Switch 20 is in communication with Register 40 by line (C). The Register 40 is in communication with the Credit Management Processor 50 and/or the Debit Management Processor 52 by line(s) (D). The Credit Management Processor 50 and/or a Debit Management Processor 52 are in communication with the Purchase System Switch by lines (E). The Purchase System Switch 20 is in communication with a Seller 72 by line (F). As previously indicated in the discussion concerning FIG. 1, it is possible to eliminate lines (E), with connections (C) and (D) being by two-way multiplex data link.

As in FIG. 1, in FIG. 2 the Purchase System Switch 20 would be in communication with Network Switch 30 of the telephone network, and also in communication with Register 40 of the Remote Purchasing System. The Purchase System Switch 20 will handle the telephony aspects of the incoming calls, passing an incoming call, and the CPIDN associated therewith, to Register 40. The Register would test the CPIDN of the incoming call against the stored list(s) of authorized Caller Accounts and CPIDNs. If the incoming call's CPIDN matches to an authorized Caller Account (either a credit or a debit account), Register 40 would pass the incoming call and associated Call Information to the appropriate Credit or Debit Management Processor 50, 52.

The Credit or Debit Management Processor 50, 52 would then open a communication link back to the Purchase System Switch 20 (either through line E, or in a preferred embodiment, through two-way data lines C and D), the Switch 20 would request the number of the called party from the calling party and would route the call to the called number of the Seller 72. At this point, the Remote Purchasing System would have established a Three-Way Verified Connection between the Credit or Debit Management Processor 50 or 52, the calling party at Home Base 60, and a Seller 72 at the Seller's called number.

Thus, in FIG. 1 and in FIG. 2, by virtue of the Three-Way Verified Connection, the calling party and the

Seller will be in communication, not only with one another, but also with the Credit or Debit Management Processor 50 or 52. Accordingly, if the calling party and the Seller are ready to make a purchase and sale, the calling party will be able, through his or her Telephonic Device, (a) to signal the Credit or Debit Management Processor 50 or 52 that the calling party and the Seller are ready to complete a transaction; and (b) to provide the Credit or Debit Management Processor with the transaction information. The Credit or Debit Management Processor 50 or 52 would then charge or debit the transaction against the Caller Account associated with the CPIDN of the Home Base 60 of the calling party. Optionally, if the Seller 72 has an account, the Credit or Debit Management Processor 50 or 52, could automatically credit the transaction to an account associated with the Seller 72.

FIGS. 3 and 4 reflect configurations in which the Remote Purchasing System is used not as a stand alone system and not in conjunction with a third party provider of credit, but rather as an internal system for a particular third party provider of credit or as front end or internal system for a particular Seller, in which the calling party dials the general number of the third party provider of credit or of the Seller. The dynamics of FIGS. 3 and 4 do not vary from those in FIGS. 1 and 2. What is different is that the calling party calls directly to the general number of a Seller or a third party provider of credit, and once again the Remote Purchasing System becomes completely



transparent and the prospective purchaser (the calling party) views himself or herself as calling and dealing directly with a particular Seller or a particular third party provider of credit.

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Thus for example, a department store or a catalogue seller could utilize the Remote Purchasing System as part of its own marketing and billing system. The prospective purchaser would dial the number of the Seller. If the number is the general number of the Seller the configuration of FIG. 3 would be utilized. If that number is a special number for the Seller's Remote Purchasing System the general configuration of FIG. 1 would be utilized. In either case, however, the prospective purchaser would be calling the Seller rather than an independent Remote Purchasing System.

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Alternatively, as another example, VISA, MASTERCARD or AMERICAN EXPRESS could offer Remote Purchasing System accounts (credit or debit) to their existing (or new) customers. These would be accounts provided by the third party provider of credit and the prospective purchaser, as a holder of such an account, would call directly to the third party provider of service, either to a general number of such provider (FIG. 4) or to the special number for the Remote Purchasing System of such provider (FIG. 1). In either case, the prospective purchaser would be calling the third party provider rather than an independent Remote Purchasing System.

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The second embodiment of the Remote Purchasing System just summarized about is set forth in FIG. 3. In this embodiment the calling party dials the general number of the Seller 72. The calling party at Home Base 60 is  
5 linked by line (A) to Network Switch 30. Network Switch 30 is linked by line (B) to the Seller 72, very likely to a live person at the switchboard. Upon learning that the call is for the Remote Purchasing System, the operator transfers it on Line (C) to the Purchase System Switch 20. The  
10 Purchase System Switch 20, which could be the Switch of the Seller or the Switch of a third party provider of credit, is in communication with Register 40 by line (D). The Register 40 is in communication with the Credit Management Processor 50 and/or the Debit Management Processor 52 by  
15 lines (E). The Credit Management Processor 50 and/or a Debit Management Processor 52 are in communication with the Purchase System Switch by lines (F). To the extent that a live person is required to participate in the sales transaction, the Purchase System Switch 20 remains in  
20 communication with the Seller 72 by line (C). As previously indicated in the discussion concerning FIG. 1, it is possible to eliminate lines (F), with connections (D) and (E) being two way multiplex data link.

25 The third embodiment of the Remote Purchasing System previously summarized is set forth in FIG. 4. In this embodiment the calling party 60 dials the general number of a third party provider of credit 86. The dynamics are not significantly different from those in FIG. 3. An operator

of the provider, upon learning that the call is for the Remote Purchasing System, transfers it on line (C) to the Purchase System Switch 20 of the provider 86. Thereafter this third embodiment works substantially the same as in FIG. 3, except that the Purchase System Switch will eventually have to request the number of the Seller and connect the call to the Seller (72 as shown in FIG. 4) on line (G).

Thus, it may be seen that, irrespective of the embodiment, the Remote Purchasing System of this invention centers on the use of the unique CPIDN associated with the telephone line of a calling Telephonic Device in conjunction with a Three-Way Verified Connection. It has been further explained that the Three-Way Verified Connection is one in which the telephony aspects of the call are handled by a Switch (Purchase System Switch 20 or Network Switch 30, or some combination of both); the credit/debit aspects of the connection, including the posting of a sale transaction between calling party and called party, are managed by the Debit Management Processor or Credit Management Processor 50 or 52 in cooperation with the calling party's Caller Account; and the calling party's Caller Account can be accessed, activated and credited and/or debited only after matching the CPIDN of the calling party, as verified by the Switch 20, with an authorized CPIDN held within the Register 40 of the Remote Purchasing System of this invention.

While the foregoing description explains the basic Remote Purchasing System, it should be noted that the system of this invention has been designed for further flexibility.

5           In particular, the system may: (1) be operated in conjunction with the local telephone network or not, (2) be initiated through any Telephonic Device, (3) be established to access a credit account, a debit account, or both, (4) be operated through a Purchase System Switch, (5) be accessed  
10 through (a) an "800" number, (b) a 15 digit carrier interface number, (c) the general number of a particular third party provider of credit or of a particular Seller or (d) the special Remote Purchasing System number of a particular third party provider of credit or of a particular  
15 Seller, (6) be operated through conventional lines, T-1's, or other lines, including a data link for certain lines or connections, (7) be operated with internal or remote Credit and Debit Management Processors, (8) be operated with or without "call back" facilities, (9) be operated with or  
20 without the use of ancillary PIN numbers, (10) be operated as a "stand alone" system, as a system in conjunction with one or more providers of credit, as or an integral part of the credit (or debit) system of a particular third party provider of credit, or as a front end or an integral part of  
25 the billing system of a particular Seller, (11) be operated so as to provide independent oral or written confirmation to the Seller of the entry of the transaction and also to automatically (and, where appropriate, instantly) credit the Seller in certain cases, (12) be operated to provide voice

prompts and perhaps accept voice instructions and (13) be operated with Actual or Virtual Three-Way Verified Connections.

5           1.   Operations in Conjunction with the Local Telephone Network. If the system of this invention is operated in conjunction with the local telephone network, then a special code or access number could inform the Network Switch that the incoming call is a remote purchase  
10   call, rather than a conventional call. Thus, a special code or access number could be dialed by the calling party on the calling Telephonic Device to access the Remote Purchasing System, and upon receiving a call with this access number, the Network Switch would automatically transfer the call to  
15   the Remote Purchasing System associated with the Network Switch. In this embodiment, the dialed number would be the number of the called party and it would be unnecessary for the Remote Purchasing System subsequently to request the number of the called party.

20           Alternatively, the calling party could dial the number for the Remote Purchasing System or access number, but would require the Remote Purchasing System subsequently to request the number of the called party.

25           At least initially it is assumed that the Remote Purchasing System will not be operated in conjunction with the local telephone network.

2. Initiation Through any Telephonic Device. Any Telephonic Device can access the Remote Purchasing System. The protection is the CPIDN of the registered Home Base.

5           3. Access to a Credit Account, a Debit Account, or Both. The Remote Purchasing System of this invention is established to offer true credit (that is, a credit account), or access only to prepaid credit (that is, a debit account), or both. Any of these three permutations is  
10 possible, consistent with the Remote Purchasing System of this invention. Accordingly, the Caller Account associated with the calling party's Home Base CPIDN may be a true credit account, or may be a debit account, and different calling parties may have different account types, thus  
15 providing access to either or both types of accounts. In this discussion, it has been assumed that the Remote Purchasing System is established to offer both true credit and access to prepaid credit. In such an embodiment, Register 40 will contain a list of CPIDNs approved for  
20 credit transactions, as well as a list of CPIDNs approved for debit transactions.

The Credit Management Processor 50 would manage credit account information for the Caller Accounts, and  
25 would be configured to do so with respect to credit accounts (credit limits, credit balance, and the like). The Debit Management Processor 52 would manage debit account information with respect to debit accounts (amount of

prepaid credit, debiting against such credit, replenishing prepayment, and the like) and would be configured to do so.

4. Operation Through a Purchase System Switch. As

5 previously discussed in connection with FIG. 1, it is important that the functionality of the Purchase System Switch 20 be provided. Such functionality could, possibly be included within a Network Switch 30, or it could stand alone. Assuming two separate Switches, the Purchase System  
10 Switch 20 would be the component of the Remote Purchasing System to receive an incoming call from the Network Switch 30, and it would perform some or all of seven functions, as follows:

15 First, the Purchase System Switch 20 would be able automatically and completely reliably to read and work with the unique CPIDN of the calling Telephonic Device placing the incoming Remote Purchasing System call. It would compare this number with the list in Register 40 of CPIDNs  
20 cleared for true credit, and if it (or the Register) finds this number on this list it (or the Register) would route the incoming call through the Credit Management Processor 52, to be managed therein in accordance with the Caller Account (for true credit) associated with the CPIDN  
25 of the calling Telephonic Device placing the incoming call. The Purchase System Switch 20 would also compare this number with the list in Register 40 of CPIDNs cleared for access to prepaid credit (that is, a debit account), and if it or the Register) finds this number on this list it (or the

Register) would route the incoming call through the Debit Management Processor 52, in this case to be managed therein in accordance with the Caller Account (for access to prepaid credit) associated with the CPIDN of the calling Telephonic Device placing the incoming call. If it (or the Register) does not find this number on either list in the Register of CPIDNs, it would then reject the incoming call (or, more likely, voice prompt the calling party to press a number or symbol on the calling Telephonic Device to access an operator).

Second, it would connect with the Credit Management Processor 50 or Debit Management Processor 52, and in either case, the Caller Account associated with the CPIDN of the calling party, as well as maintaining its connection with the incoming call from the calling party.

Third, it would voice prompt the calling party to dial (or otherwise provide) the number (or identity) of the called party.

Fourth, it would voice prompt the calling party to dial a signal, such as, for example "CHG" if and when the caller is ready to purchase.

Fifth, it would connect the calling number with the called number and, if appropriate (i.e., if the Remote Purchasing System is not operated in conjunction with the local telephone network), it would record the Call



Information, and transmit it to the Credit Management Processor 50 or Debit Management Processor 52 so that the line charges could be billed.

5 Sixth, it would facilitate transmission of the transaction information (amount to be charged or debited; Seller to be credited) from the calling party to the Credit Management Processor 50 or Debit Management Processor 52, including voice prompts which would enable the calling party  
10 to correct or verify the accuracy of the transaction and including assuring that the instructions to charge or debit has come only from the authorized line.

Seventh, it would facilitate transmission of a  
15 confirmation of the transaction from the Credit Management Processor 50 or Debit Management Processor 52 to the Seller.

Note that the Switch could perform only some or all of the seven functions described above.

20 5. Access by "800" Number or Carrier Interface Number, Third Party Provider Number or Seller Number. A Remote Purchasing System telephone number would be dialed by the calling party on the calling Telephonic Device to access  
25 the Remote Purchasing System. There are at least five possibilities, as follows:

(a) The telephone number could be a Remote Purchasing System local number, which would cause a Network

Switch 30 or 32 to direct the call to a Remote Purchasing System operating within and as part of the Network.

(b) The telephone number could be a Remote Purchasing System "800" number, which would be channeled through a Network Switch 30 or 32 but which would then connect to the Purchase System Switch 20.

(c) The telephone number could be a 15 digit carrier interface number, with the first 5 digits connecting directly to the Purchase System Switch 20 and with the remaining 10 digits being the number of the Seller. This would eliminate the need for going through a Network Switch 30 or 32, as well as the need for a voice prompt subsequently requesting, and the calling party subsequently providing, the numbers of the called party.

(d) The telephone number could be the normal number of a particular third party provider of credit or of a particular Seller.

(e) The telephone number could be a special Remote Purchasing System number of a particular third party provider of credit or of a particular Seller.

In situations (d) and (e), the Remote Purchasing System becomes completely transparent and becomes a front end for, plus an internal part of, the billing apparatus of

the Seller or an integral part of the credit system of the third party provider of credit.

5           The foregoing examples are representative of the structures and methods for effecting the connection and it should be apparent that other equivalent structures and methods could also be used.

10           In any case, when the call is received by the Remote Purchasing System, it would be received by the Purchase System Switch 20, which would have essentially the same capabilities for identifying and working with the CPIDN as the Network Switch 30.

15           In the "800" number configuration, the Purchase System Switch 20, will, in the first instance, get only the CPIDN. The Purchase System Switch 20 will then have to ask the calling party (the purchaser) for the number of the called party (the Seller).

20           In the 15 digit carrier interface configuration, the Purchase System Switch 20 can pass, through the Register 40, to the Credit or Debit Management Processor 50 or 52, not only the CPIDN, but also the number of the called party.

25           In the configuration involving the normal number of a particular third party provider of credit or of a particular Seller, or a special Remote Purchasing System number of a particular third party provider of credit or of

a particular Seller the steps are the same except that where the number of a Seller is involved, (a) there is no need separately to ask for or get the number of the called party (Seller) and (b) the link to the Seller is automatic and built in (and does not require a separate port).

6. Operation Through Conventional Lines Or Otherwise. The Remote Purchasing System of this invention may be operated through conventional lines, T-1's, or other lines, including a data link for certain lines or connections.

7. Operation with Internal or Off-Site Credit and Debit Management Processors. As previously discussed, the Remote Purchasing System of this invention may be operated with internal or off-site Credit and Debit Management Processors 50 and 52. It should be noted that although the previously mentioned Credit Management Processor 50 and Debit Management Processor 52 have been discussed as though they are separate units it is also possible they might be the same unit. It should also be noted that the Credit Management Processor 50 and Debit Management Processor 52 might be part of the Remote Purchasing System; part of the credit and/or debit facilities of a general, third party provider of credit (such as VISA); or part of the credit and/or debit facilities of a particular Seller.

8. Operation with or Without Call Back Facilities. The Remote Purchasing System of this invention may be

operated with or without call back facilities. Thus, after an incoming call is received by the Purchase System Switch 20, the Purchase System Switch 20 could be set up to provide for a call back to the calling party rather than for accepting the call from the calling party. Utilization of call back facilities would be a function of cost and perhaps of the potential for increased security. Call back facilities could also be a solution for establishing a secure connection with Telephonic Devices connecting to the Purchase System Switch through a PBX.

9. Ancillary PIN Numbers. Optionally, the Remote Purchasing System may be configured to require the calling party to enter a PIN number for access to their Caller Account in order to prevent unauthorized use of the calling party's Telephonic Device by another person calling from that number. Optional configurations could require the use of such a PIN number in all cases, not require the use of such a PIN number at all, or require the use of such a PIN number only upon the pre-registered request of the calling party. PIN numbers could also be used to differentiate between multiple Telephonic Devices associated with a single PBX and, therefore, with the single CPIDN of that PBX.

10. Stand Alone; In Conjunction With Groups of Credit Providers, For a Particular Third Party Provider of Credit or a Particular Seller. The Remote Purchasing system can be implemented in a number of different configurations.

As a stand alone facility, the Remote Purchasing System could provide its own basis for offering credit and/or debit facilities to purchasers and Sellers.

5           The Remote Purchasing System could also function as a stand alone facility, but operating in conjunction with third party providers of credit, such as VISA, MASTERCARD or AMERICAN EXPRESS or such as a bank. Thus, potential purchasers who have already established VISA, MASTERCARD, AMERICAN EXPRESS or similar accounts, could sign on for the service of the Remote Purchasing System with the Remote Purchasing System then becoming in whole or in part a "merchant" pursuant to the facilities offered by one or more of VISA, MASTERCARD, AMERICAN EXPRESS, etc.

15           The Remote Purchasing System could become part of the credit system of one or more of VISA, MASTERCARD, AMERICAN EXPRESS or similar providers. In this circumstance, the Remote Purchasing System would simply be a supplementary service offered by one or more of these third party providers of credit. Under these circumstances, it is very likely that the Remote Purchasing System will become transparent and the prospective purchaser would view itself as dealing solely and wholly with VISA, MASTERCARD, AMERICAN EXPRESS, etc.

20           The Remote Purchasing System could also serve as a front end for, or part of the billing system of, a particular Seller. This is the configuration in which the

prospective purchaser would be calling the number either of the Seller or of the Remote Purchasing System of the Seller. The Remote Purchasing System would be integrated into the billing system of the Seller. Once again, very likely, the Remote Purchasing System would become completely transparent and the prospective purchaser would see himself or herself as dealing solely and wholly with the Seller.

11. Operation to Provide Independent Oral or Written Confirmation. The Remote Purchasing System of this invention may be operated so as to provide independent oral or written confirmation to the Seller of the entry of the transaction and also instantly credit the Seller in certain cases.

12. Voice Prompts and Voice Response. The Remote Purchasing System of this invention could make use of a variety of prompts, including:

\* In the case of an "800" number, the Purchase System Switch 20 will ask the purchaser to dial (or otherwise provide) the number (or some other identifying feature) of the called number (the seller).

\* After a link has been established between the Credit or Debit Management Processor 50 or 52 and the Purchase System Switch, and just before or after linking the calling party and the Credit or Debit Management Processor with the Seller, the Purchase System Switch 20 will instruct

the calling party how to notify it when and if the calling party is ready to make a purchase (for example, Dial "CHG").

5           \* An instruction to enter, and how to enter, the amount of a purchase.

10           \* A read-back of the amount entered for the transaction, together with an instruction of what to do if the amount is right and what to do if the amount is wrong.

15           \* An acknowledgment that the transaction is valid and has been entered or, alternatively, that the transaction is invalid and has not been entered (and perhaps the reason or reasons therefor).

20           \* In the case of a Caller Account which provides access to prepaid credit, upon request from the calling party, the amount remaining in the Caller Account after the transaction.

25           \* Confirmation (written or oral) to the Seller that the transaction is valid and has been entered and that the amount has been credited to the seller's or provider's account.

These could be voice prompts when the incoming call is from a telephone, they could be text prompts if the incoming call is from a fax, and they could be voice or text prompts if the incoming call is from a computer. In



connection with the foregoing voice prompts, the Remote Purchasing System can request the calling party to enter the telephone number of the called party, or alternatively, the Remote Purchasing System can feature a directory of all participating Sellers and simply ask the calling party to enter the first three letters of the calling party's name (or take alternate steps when the first three letters involve multiple Sellers).

It is also possible that the Remote Purchasing System Switch could be configured not only to provide voice prompts but also to accept voice responses. Although this technology is not fully developed at this time, it is very likely sufficient even as of now to accept a command of "charge" or of "\$42.95".

13. Virtual Connections. One of the key attributes of the Remote Purchasing System is the Three-Way Verified Connection. As was indicated earlier, in most cases this will very likely be an actual Three-Way Connection but in some instances, this may be a Virtual Three-Way Verified Connection. Examples of a Virtual Three-Way Verified Connection are as follows:

(a) An initial connection between a fax machine at the Home Base of the calling party and the Credit or Debit Management Processor and a second connection between the Debit or Credit Management Processor and the called party (Seller).

(b) An initial connection between the calling party and the Credit or Debit Management Processor, but with respect to which it is impossible to reach the called party (Seller). The Remote Purchasing System could be configured to provide for automatic recalls until the called party or Seller is reached, at which time the Credit or Debit Management Processor could be configured to place the order on behalf of the calling party. In the case of catalogue purchasing, or other purchasing where the purchased item is clearly designated and priced, such deferred placing of the order is conceivable and feasible, and could be accomplished through the use of a Virtual Three-Way Verified Connection.

What is claimed is:

1. A system linking a calling party (prospective purchaser) and a called party (prospective seller) for purchasing and selling goods or services over a telephone network, using a calling party identification number (CPIDN) of the calling party and a three-way connection to provide security against fraud, comprising:

(a) a caller account of the calling party associated with the CPIDN of the calling party,

(b) a switch capable of reading the CPIDN of the calling party and capable of establishing a telephonic connection,

(c) a register in communication with the switch, said register storing a list of authorized CPIDN's, and

(d) a transaction processor in communication with at least one of the switch and the register, said processor including means for controlling the caller account of the calling party and managing a transaction in which a debit or a charge is posted to the caller account of the calling party, wherein said switch selectively establishes a three-way connection among the calling party, the prospective seller, and the transaction processor upon a match of the CPIDN of the calling party and a CPIDN in the list of authorized CPIDN's.

2. The system of claim 1, further comprising authorizing means, controlled by the calling party, for

authorizing said transaction in which a debit or a charge is posted to the caller account of the calling party.

3. The system of claim 2, wherein the authorizing means is a telephonic device on a telephone line of the calling party.

4. The system of claim 3, wherein, responsive to the authorizing means, the transaction processor posts the transaction to the caller account associated with the CPIDN of the calling party in accordance with a predetermined set of conditions associated with said caller account.

5. The system of claim 4, wherein, responsive to said authorizing means, the transaction processor posts the transaction to a seller account associated with the called party.

6. A system linking a calling party (prospective purchaser) and a called party (prospective seller) for purchasing and selling goods or services over a telephone network, using a calling party identification number (CPIDN) of the calling party and a series of two-way connections to provide security against fraud, comprising:

(a) a caller account of the calling party associated with the CPIDN of the calling party,

(b) a switch capable of reading the CPIDN of the calling party and capable of establishing a telephonic connection,

(c) a register in communication with the switch, said register storing a list of authorized CPIDN,s, and

(d) a transaction processor in communication with at least one of the switch and the register, said processor including means for controlling the caller account of the calling party and managing a transaction in which a debit or a charge is posted to the caller account of the calling party, wherein said switch selectively establishes a series of two-way connections, including at least two of the following two-way connections: a first two-way connection between the calling party and the transaction processor; a second two-way link between the calling party and the prospective seller; and a third two-way link between the transaction processor and the prospective seller, upon a match of the CPIDN of the calling party and a CPIDN in the list of authorized CPIDN's.

7. The system of claim 6, further comprising authorizing means, controlled by the calling party, for authorizing said transaction in which a debit or a charge is posted to the caller account of the calling party.

8. The system of claim 7, wherein the authorizing means is a telephonic device on a telephone line of the calling party.

9. The system of claim 8, wherein, responsive to the authorizing means, the transaction processor posts the

transaction to the caller account associated with the CPIDN of the calling party in accordance with a predetermined set of conditions associated with said caller account.

5                   10. The system of claim 9, wherein, responsive to said authorizing means, the transaction processor posts the transaction to a seller account associated with the called party.

10                   11. A system linking a calling party (prospective purchaser) and a called party (prospective seller) for purchasing and selling goods or services over a telephone network, using a calling party identification number (CPIDN) of the calling party and a three-way connection to provide  
15 security against fraud, comprising:

(a) matching means for matching the CPIDN of the calling party against a list of authorized CPIDN's,

(b) transaction managing means for managing a purchase transaction in which a charge or a debit is posted  
20 to the calling party,

(c) connecting means, responsive to said matching means, for selectively establishing a three-way connection among the calling party, the prospective seller, and the transaction managing means, and

25                   (d) activating means, controlled by the calling party, for activating the transaction managing means, thereby charging or debiting the purchase transaction to the calling party.

12. A system linking a calling party (prospective purchaser) and a called party (prospective seller) for purchasing and selling goods or services over a telephone network, using a calling party identification number (CPIDN) of the calling party and a series of two-way connections to provide security against fraud, comprising:

(a) matching means for matching the CPIDN of the calling party against a list of authorized CPIDN's,

(b) transaction managing means for managing a purchase transaction in which a charge or a debit is posted to the calling party,

(c) connecting means, responsive to said matching means, for selectively establishing a series of two-way connections, including at least two of the following two-way connections: a first two-way connection between the calling party and the transaction managing means; a second two-way link between the calling party and the prospective seller; and a third two-way link between the transaction managing means and the prospective seller, and

(d) activating means, controlled by the calling party, for activating the transaction managing means, thereby charging or debiting the purchase transaction to the calling party.

13. A remote purchase system, comprising:

(a) a plurality of authorized calling parties, each having a home base, each home base having a telephone line in communication with a telephone network, each

telephone line having a unique calling party identification number (CPIDN),

(b) a plurality of caller accounts, each caller account associated on a one-to-one basis with a CPIDN of a home base of an authorized calling party,

(c) a switch in communication with the telephone network,

(d) a register in communication with said switch, the register holding a list of caller accounts and associated CPIDN's, wherein the switch passes an incoming call and a set of call information associated therewith, including a CPIDN, to the register and the register tests the CPIDN of the incoming call against a list of approved CPIDNs and, if the CPIDN of the incoming call matches a CPIDN on the list of approved CPIDNs, the register passes the incoming call to a processor which controls the caller account associated with the calling party, and wherein the processor opens a link back to the switch, the switch requests a called number from the call information associated with the incoming call, and routes the call to the called number, the switch completing a three-way connection between the processor, the calling party and a called party at the called number, and

(e) indicating means in communication with said processor and responsive to the calling party for indicating that the calling party and the called party have completed a transaction, wherein the processor, in response to said indicating means, charges or debits the transaction



against the caller account associated with the CPIDN of the home base of the calling party.

14. The system of claim 13 wherein the processor,  
in response to said indicating means, credits or debits the transaction to a seller account associated with the called party.

15. A method for linking a calling party  
(prospective purchaser) and a called party (prospective seller) for purchasing and selling goods or services over a telephone network, using a calling party identification number (CPIDN) of the calling party and a three-way connection to provide security against fraud, comprising:

(a) matching the CPIDN of the calling party against a list of authorized CPIDN's,

(b) selectively establishing a three-way connection among the calling party, the prospective seller, and a transaction processor upon a match of the CPIDN of the calling party and a CPIDN in the list of authorized CPIDN's, and

(c) activating the transaction processor, responsive to an authorization from the calling party, thereby charging or debiting a purchase transaction to the calling party.

16. A method for linking a calling party  
(prospective purchaser) and a called party (prospective seller) for purchasing and selling goods or services over a

telephone network, using a calling party identification number (CPIDN) of the calling party and a series of two-way connections to provide security against fraud, comprising:

(a) matching the CPIDN of the calling party  
5 against a list of authorized CPIDN's,

(b) selectively establishing a series of two-way connections, including at least two of the following two-way connections: a first two-way connection between the calling party and a transaction processor; a second two-way  
10 link between the calling party and the prospective seller; and a third two-way link between the transaction processor and the prospective seller, upon a match of the CPIDN of the calling party and a CPIDN in the list of authorized CPIDN's, and

15 (c) activating the transaction processor, responsive to an authorization from the calling party, thereby charging or debiting a purchase transaction to the calling party.

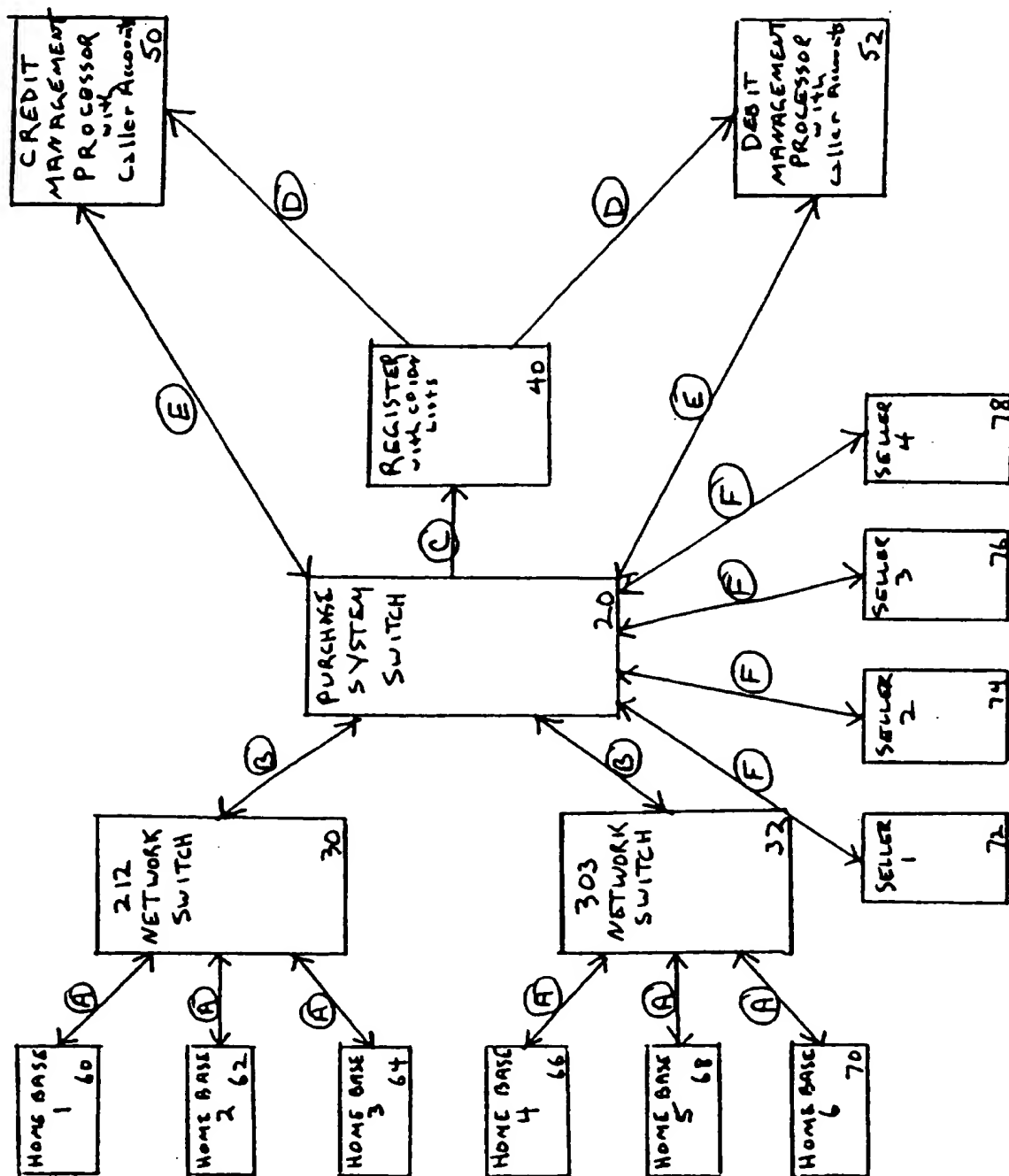
FIGURE 1

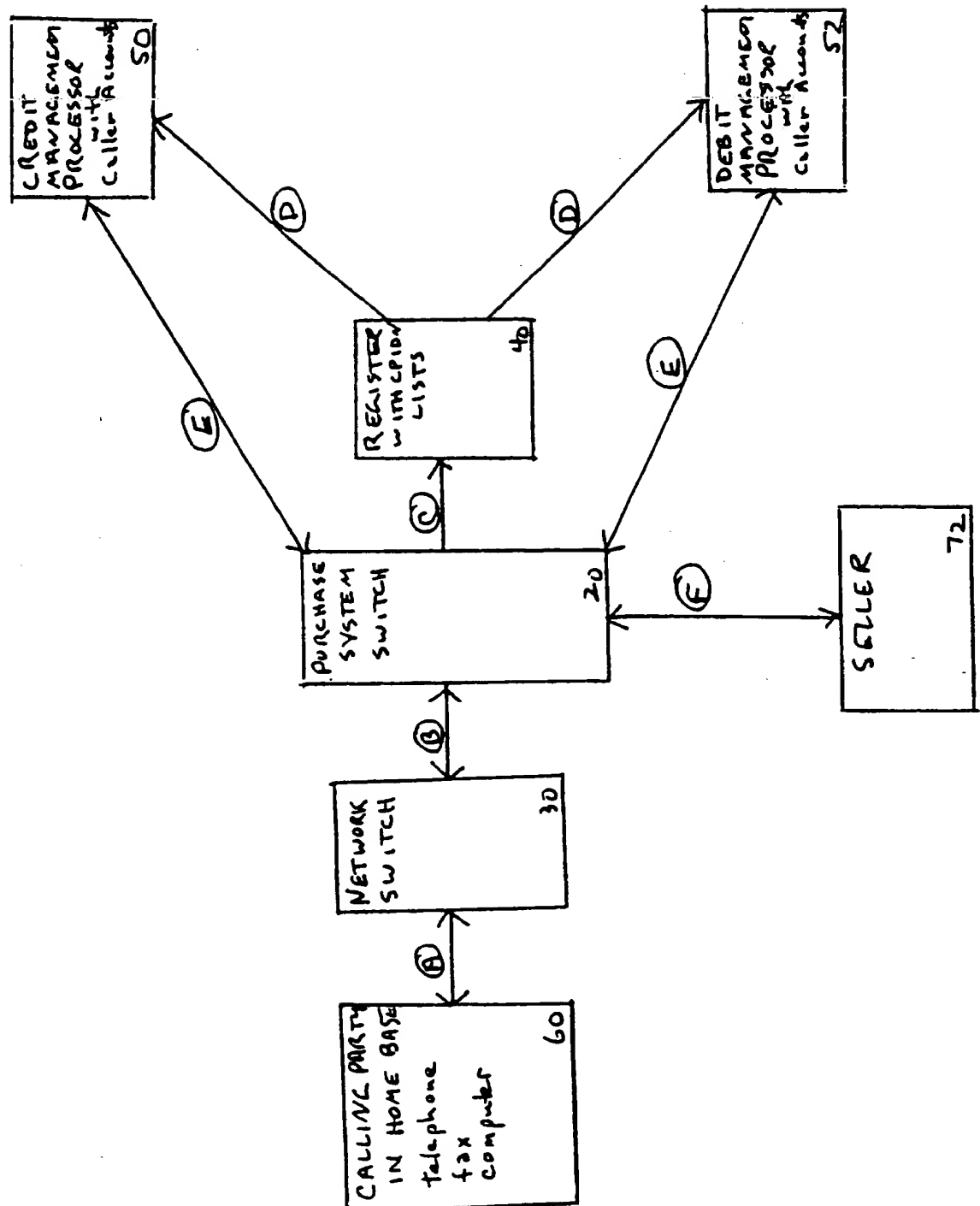
FIGURE 2

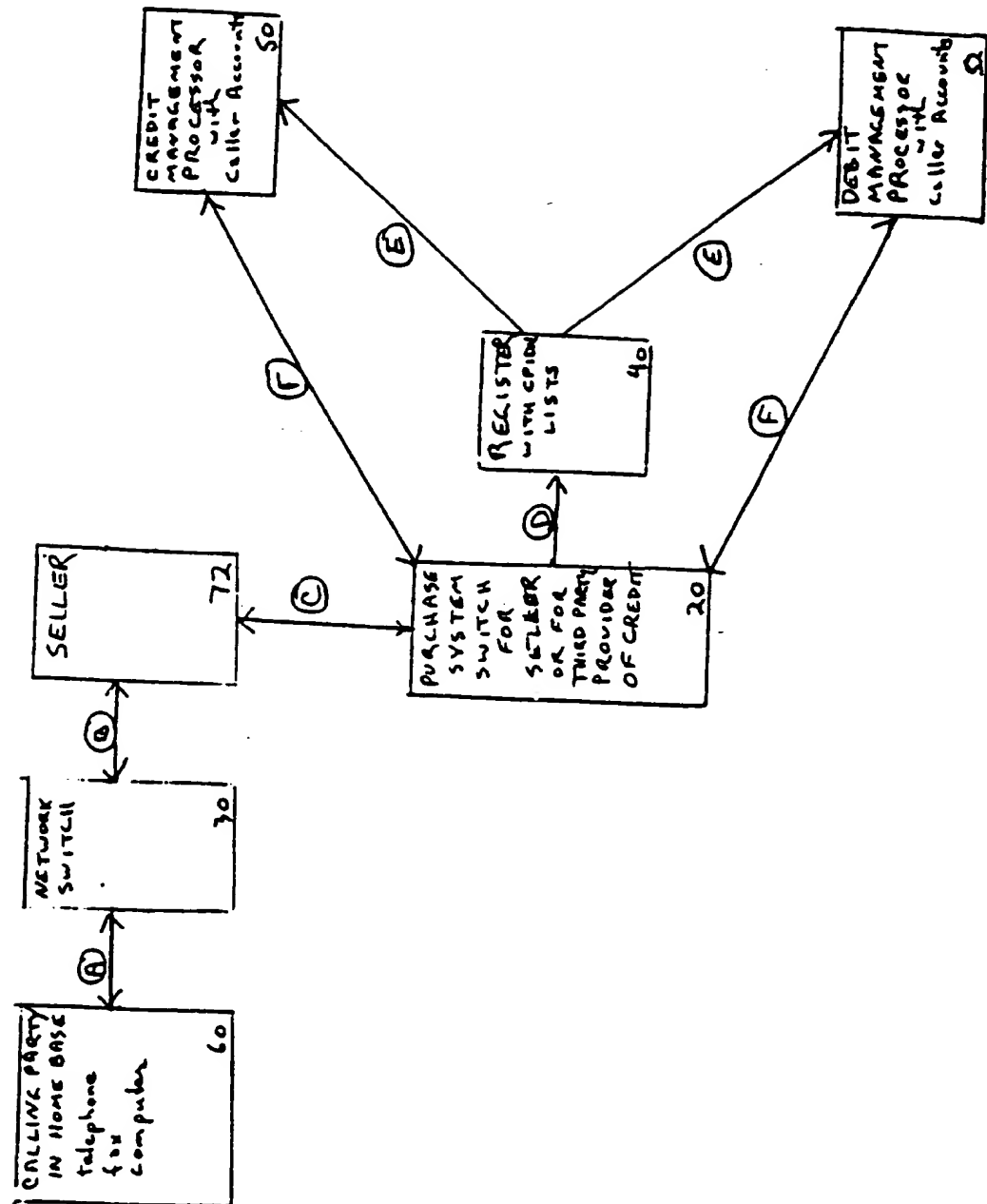
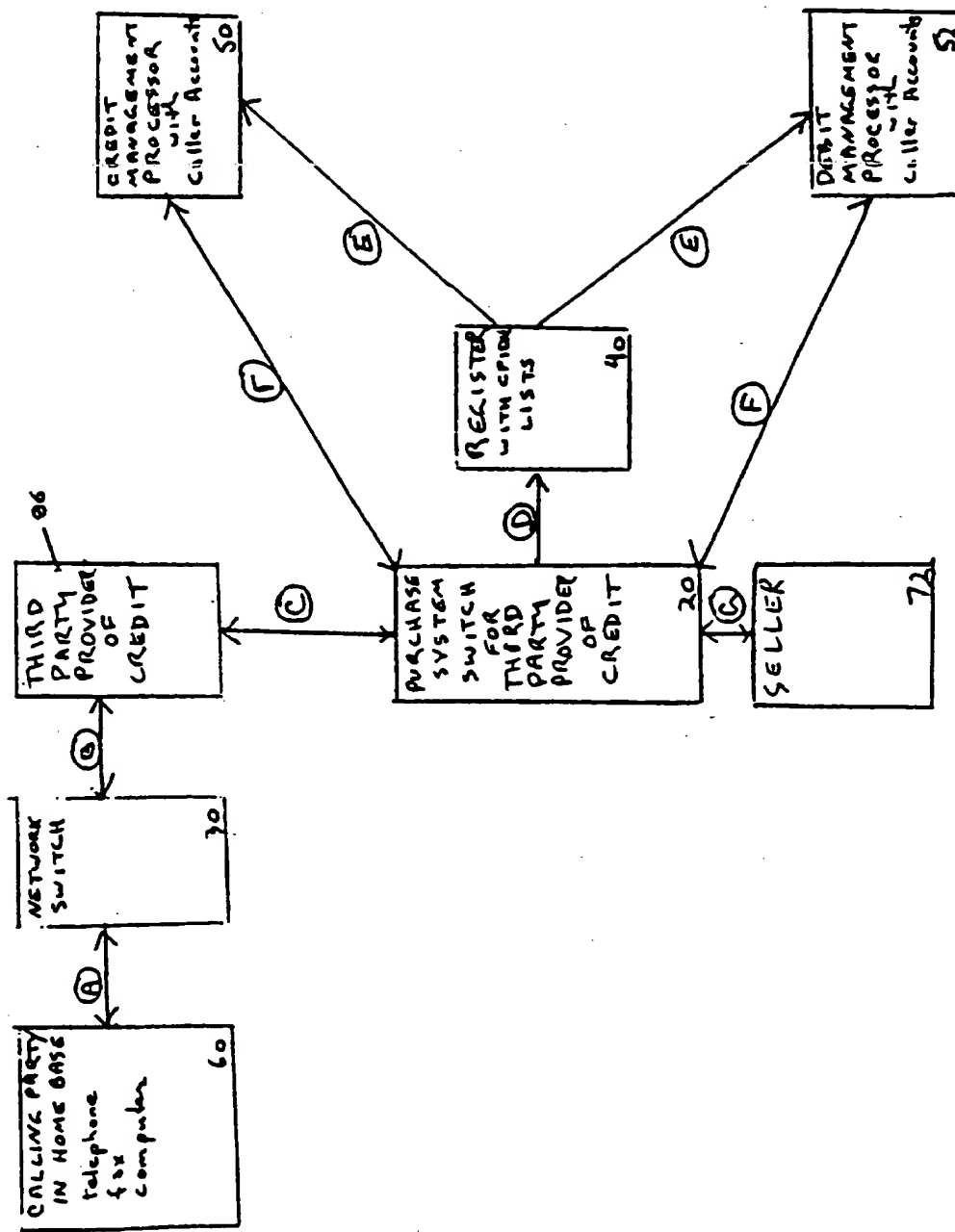
FIGURE 3

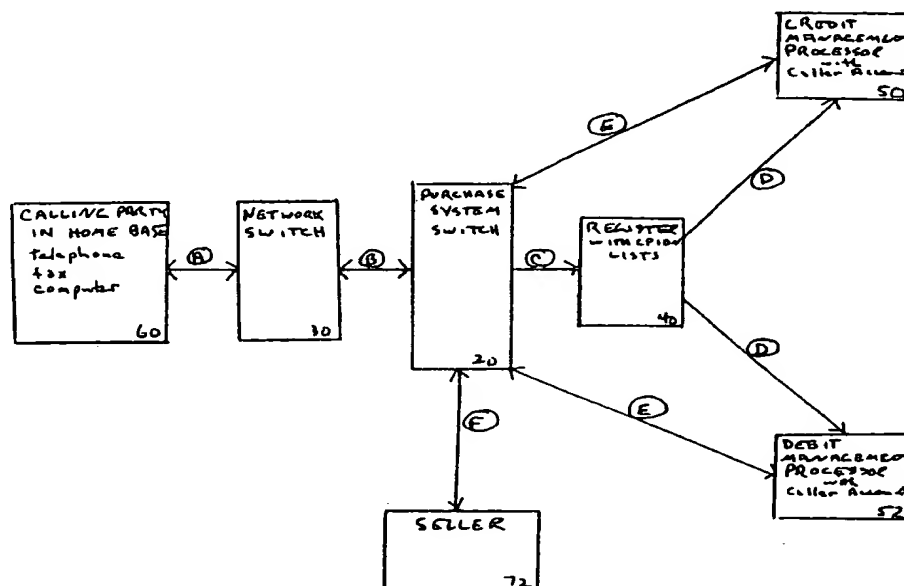
FIGURE 4



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(74) Agent: FOLSOM, Thomas, C.; Davis, Graham & Stubbs L.L.P., Suite 4700, 370 Seventeenth Street, P.O. Box 185, Denver, CO 80201-0185 (US).		<p><b>Published</b>  <i>With international search report.</i>  <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p>	
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## (54) Title: FRAUD RESISTANT REMOTE PURCHASING SYSTEM



## (57) Abstract

A remote purchasing system linking a calling party (prospective purchaser) (60) and a called party (prospective seller) (60) for purchasing and selling goods or services over a telephone network, using a calling party identification number (CPIDN) of the calling party (60) and a three-way connection (or a series of two-way connections) to provide security against fraud. An authorized calling party (60) is assigned a caller account associated with calling party's CPIDN. A switch (30) or other facility of the system reads the CPIDN of an incoming call, and a register (40) within the system tests the CPIDN against an approved list. If the CPIDN matches, then the system completes the call, a transaction processor (50 or 52) within the system participating. The transaction processor (50 or 52) controls the caller account in accordance with predetermined conditions and, responsive to an authorization from the calling party (60), will post the transaction to the caller account of the calling party (60).

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# INTERNATIONAL SEARCH REPORT

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PCT/US96/05193

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : H04M 11/00

US CL : 379/91

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## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 379/91, 95, 97, 113, 202, 210, 211, 212

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US, A, 5,329,589 (FRASER ET AL.) 12 July 1994, Fig. 4; col. 8, line 30 - col. 9, line 31.	1-16
A	US, A, 5,313,463 (GORE ET AL.) 17 May 1994, Abstract.	1-16
A	US, A, 5,181,238 (MEDAMANA ET AL.) 19 January 1993, Abstract.	1-16

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